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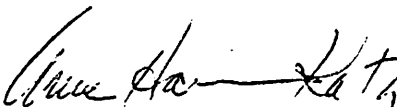
PHYSICS EDUCATION PROGRAM REVISION

Contact Richard D. Roberts in the Physics Department at 4593 regarding any questions involving this revision.

Approvals:



Department Chairperson



College Dean

Timetable:

The revision will be implemented in the Fall of the year that it is published in the catalog.

Rationale for Change:

According to Standard II of the Pennsylvania Standards for Program Approval and Teacher Certification in Physics (copy enclosed) a biology course must be required in the Physics Education major. General Biology I was suggested as an appropriate course. The biology department is currently developing a one semester General Biology course with laboratory in connection with the Liberal Studies package. This course would be even more appropriate to our needs. We would like to switch from requiring General Biology I to the one semester General Biology course when it has been approved by the University Senate. It would be several years before our majors would begin taking this course because in most cases it would be taken in either their junior or senior year. For these reasons, we are proposing that the catalog list the requirement as "General Biology course approved by advisor ... 4 s.h." Other changes are:

- 1) In order to minimize the total hours required, drop the free elective (2 s.h.).
- 2) Increasing the total degree requirements to 126 from 124.

PENNSYLVANIA STANDARDS FOR PROGRAM APPROVAL
AND TEACHER CERTIFICATION:

Physics

G.L. 7-12
Scope: CSPG 33

Standard I

The program shall require concentrated studies in physics and the broad conceptual schemes of science.

Standard II

The program shall require studies in biology, chemistry, and mathematics.

Standard III

The program shall require studies of and experience in using the laboratory skills and safety procedures that are necessary for proper experimentation.

Standard IV

The program shall require studies of and experiences in the use of the microcomputer and other instruments necessary for scientific measurements and analyses.

Standard V

The program shall require studies of mathematics needed for a quantitative and qualitative scientific analyses.

Standard VI

The program shall require studies of the interrelationships of the individual sciences.

Standard VII

The program of study should provide prospective physics teachers with opportunities to study the ethical and human implications of such contemporary issues as nuclear power plant sites and waste disposal, long-range policies, and the effects of radiation on living systems.

Standard VIII

The program should require experiences in designing, developing, and evaluating field, demonstration, and laboratory instructional activities, and in using special skills and techniques with equipment and facilities which support and enhance curricula and instruction in physics.

done

College of Education
Indiana University of Pennsylvania
104 Stouffer Hall
Indiana, Pennsylvania 15703-1090

(412) 357-2480

IUP

September 25, 1987

Mr. Richard Roberts
Physics Department
56A Weyandt

Dear Mr. Roberts:

As you know, we are writing our response to the Pennsylvania Department of Education for their interim review as part of our Teacher Education program review process. I need an update from you on the following certification area (s) _____

In your response I need to know if the activities which were underway in the Step I Phase II document are completed or still in progress.

It is very important that your written response reach me no later than Tuesday, September 29 at 11:00 a.m. Thank you.

Sincerely,



John W. Butzow
Associate Dean

dg

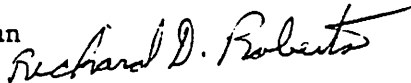
cc: Dean Ryan

SUBJECT: Teacher Education Review

September 28, 1987

TO: Dr. John W. Butzow, Associate Dean
Department of Education

FROM: Mr. R. Roberts, Chairman
Department of Physics



The physics department will require General Biology I of all Physics Education majors entering the program in the fall of 1988 or later. The biology department is currently developing a one semester General Biology course with laboratory. When that course has been approved by the University Senate, the physics department will switch from requiring General Biology I to the one semester General Biology course that is being developed.

Current Version

BACHELOR OF SCIENCE IN EDUCATION in PHYSICS

| | | |
|--|---|------------|
| GENERAL EDUCATION: As outlined in General Education section with the following specifications: | | 53 |
| Mathematics: MA123 | | |
| Natural Science: CH111-112 | | |
| Social Sciences: HI104, PC101 | | |
| Science/Math electives: CO110 or CO200 | | |
| MAJOR: | | 36 |
| Required courses: | | |
| PY131 | Physics I-C Lec | 3 sh |
| PY132 | Physics II-C Lec | 3 sh |
| PY141 | Physics I-C Lab | 1 sh |
| PY142 | Physics II-C Lab | 1 sh |
| PY222 | Mechanics I | 2 sh |
| PY231 | Electronics | 4 sh |
| PY242 | Optics | 3 sh |
| PY322 | Electricity and Magnetism I | 2 sh |
| PY331 | Modern Physics | 3 sh |
| PY350 | Intermediate Experimental Physics I | 3 sh |
| Controlled electives: | | |
| | Physics electives | 3 sh |
| OTHER REQUIREMENTS: | | 41 |
| Additional Math | | |
| MA124 | Calculus II for Physics and Chemistry | 4 sh |
| MA241 | Differential Equations | 3 sh |
| MA342 | Advanced Calculus for Applications | 4 sh |
| Professional Education Sequence | | |
| CM301 | Instructional Media | 3 sh |
| ED242 | Pre-student Teaching I | 1 sh |
| ED342 | Pre-student Teaching II | 1 sh |
| ED441 | Student Teaching | 12 sh |
| ED442 | School Law | 1 sh |
| ED451 | Teaching of Science in the Secondary School | 3 sh |
| EP302 | Educational Psychology | 3 sh |
| EP377 | Educational Tests and Measurements | 3 sh |
| FE302 | History and Philosophy of Education | 3 sh |
| FREE ELECTIVES: | | 2 |
| TOTAL DEGREE REQUIREMENTS: | | 124 |

Proposed Version

BACHELOR OF SCIENCE IN EDUCATION in PHYSICS

GENERAL EDUCATION: As outlined in General Education section
with the following specifications:

| | |
|--|----|
| Mathematics: MA123 | 53 |
| Natural Science: CH111-112 | |
| Social Sciences: HI104, PC101 | |
| Science Math electives: CO110 or CO200 | |

MAJOR: 36

| | | |
|-----------------------|-------------------------------------|------|
| Required courses: | | |
| PY131 | Physics I-C Lec | 3 sh |
| PY132 | Physics II-C Lec | 3 sh |
| PY141 | Physics I-C Lab | 1 sh |
| PY142 | Physics II-C Lab | 1 sh |
| PY222 | Mechanics I | 2 sh |
| PY231 | Electronics | 4 sh |
| PY242 | Optics | 3 sh |
| PY322 | Electricity and Magnetism I | 2 sh |
| PY331 | Modern Physics | 3 sh |
| PY350 | Intermediate Experimental Physics I | 3 sh |
| Controlled electives: | | |
| Physics electives | | 3 sh |

OTHER REQUIREMENTS: 45

| | | |
|-----------------|---------------------------------------|------|
| Additional Math | | |
| MA124 | Calculus II for Physics and Chemistry | 4 sh |
| MA241 | Differential Equations | 3 sh |
| MA342 | Advanced Calculus for Applications | 4 sh |

General Biology Course Approved by Advisor 4 sh

| | | |
|---------------------------------|---|-------|
| Professional Education Sequence | | |
| CM301 | Instructional Media | 3 sh |
| ED242 | Pre-student Teaching I | 1 sh |
| ED342 | Pre-student Teaching II | 1 sh |
| ED441 | Student Teaching | 12 sh |
| ED442 | School Law | 1 sh |
| ED451 | Teaching of Science in the Secondary School | 3 sh |
| EP302 | Educational Psychology | 3 sh |
| EP377 | Educational Tests and Measurements | 3 sh |
| FE302 | History and Philosophy of Education | 3 sh |

TOTAL DEGREE REQUIREMENTS: 126